309 The use of a volumetric infusion device for intravenous antibiotic desensitisation in cystic fibrosis

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Objective: To investigate an alternative method of intravenous (IV) antibiotic desensitisation in patients with cystic fibrosis (CF).
The use of IV antibiotics is a central part of the management of pulmonary infections in CF. Allergic reactions to antibiotics are more common in patients with CF in part due to repeated exposure to high doses [1]. Desensitisation, an established procedure in CF allows use of these antibiotics in all but severe allergic reaction through induction of temporary immune tolerance. Desensitisation involves a 7 step administration of incremental doses of antibiotic. Doses are made by our pharmacy department, require 24 hours notice for production and the service is costly.
Method: We developed a protocol to use a volumetric infusion device (VID) to administer established 7 step desensitisation regimens. Desensitisations using the VID were prepared and administered by a clinical nurse specialist.
Results: Over 5 months 9 patients received IV antibiotic desensitisation using a VID. This was successful in all but 1 patient. The flow rate for Step 7 of the original desensitisation regimen was reduced as this flow rate could not be administered in patients with TIVADs. The use of a VID allowed greater flexibility in the timing and frequency of desensitisation. There was no delay in treatment for patients requiring desensitisation when the VID was used.
Conclusion: A 7 step IV antibiotic desensitization programme using a VID is well tolerated, safe and cost effective. The use of a VID can reduce delay in patients with drug allergies receiving IV antibiotics.

Reference(s)

[1] J S Parmar, S Nasser. Antibiotic allergy in cystic fibrosis. Thorax 2005; 60: 517–520.

310 Detecting health changes in Omani children with cystic fibrosis (CF), using a novel nurse-led questionnaire

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Background: Little research has been done on CF in Oman. With no specialist CF centers yet it is not surprising that survival rates are still well below international standards. Overcoming cultural and communication barriers may play an important part in understanding how CF affects this unique population.
Objectives: Pulmonary Exacerbations (PEx) are known to have a negative impact on health status in children with CF. This study aims to determine if a novel nurse-led questionnaire (NQ) detects changes in the health status of individual Omani children with CF.
Methods: 9 children ranging from 2–16 years (mean 7.5) were assessed using the NQ during outpatient visits. The NQ, in Arabic, was based on published indicators of PEx, and utilized a variety of visual analogue and likert scales. Items include patient-reported changes in cough, sputum production, breathing, activity/energy levels, and appetite during the previous week. The total NQ score (NQS) were then compared with objective clinical measures.
Results: The NQS is significantly higher for admitted patients, $t(69) = 5.1$, $p < 0.001$ (mean 53.6, cf 34.8 for non-admitted). Clinical measures are significantly related to the NQS, with increased abnormal chest sounds in patients having a spike in their NQS, $t(58) = 3.03$, $p < 0.01$. BMI is significantly correlated with NQS ($R = -0.4$, $p < 0.001$).
Conclusion: The NQ is a useful and sensitive tool, indicating changes in the individual health status of these patients. This nurse-led approach to monitoring health status provides a unique and contextually appropriate opportunity for bilateral communication and patient education within a developing CF care setting.

311 Do quality of life responses signal severe loss of lung function?

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Objectives: Severe loss of lung function increases morbidity in CF. Purpose of the study was to evaluate quality of life factors preceding a loss of lung function.
Methods: 68 CF patients (29 female; age range 14–57 yrs). The Cystic Fibrosis Quality of Life Questionnaire (CFQ-R) was administered annually during routine visits of outpatients. At the first assessment condition of all patients was stable with mild lung function impairment (2010). At the second assessment (2011) two groups were defined: Sample 1: 18 patients with loss of lung function $\geqslant$10%. Sample 2: 50 patients with minor loss of lung function. In a second analysis patients were split into three age groups: A: 14–18 yrs; B: 18–25; C: >25.
Results: In retrospect, we found significant differences in HQL in Sample 1 one year prior to loss of lung function. When samples were compared according to age groups, in sample 1 group A described more emotional problems ($m = 64.4$ vs 72.2) and treatment-related problems ($m = 21.1$ vs 27.8). Group B scored lower on scales: physical functioning ($m = 73.0$ vs 84.7), body image ($m = 73.6$ vs 92.6), role performance ($m = 73.6$ vs 93.6) and health perception ($m = 13.6$ vs 55.5). Group C reported lower health perception ($m = 18.5$ vs 47.8) and energy ($m = 55.8$ vs 66.1).
Conclusion: Perceived health-related quality of life might be an early sign for illness progression. Possible predictors seem to be age-dependent. Further studies to support the preliminary results are ongoing.

312 Quality of life and related factors in patients with cystic fibrosis in Newfoundland and Labrador

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Objectives: The Cystic Fibrosis Questionnaire-Revised (CFQ-R) can help measure how the CF population responds to disease severity and the burden of therapy. To date, the CF patients of Newfoundland and Labrador (NL) have not had their health-related quality of life (HRQoL) assessed. The purpose of this study was to establish the baseline HRQoL of these patients and determine how variables such as FEV1, access to private insurance or optimal therapy, and chronic colonization with *Pseudomonas aeruginosa* (PA) affect HRQoL.
Methods: The CFQ-R was administered to all adult and adolescent CF patients in NL between June and August 2012. Patients consented and completed the survey in clinic. Descriptive statistics were generated for variables of interest. Survey responses were categorized by breaking survey domains into $\leqslant$25% (patients feels poorly about the domain), 26–75% (patient feels moderately good) and $\geqslant$76% (patient feels positively).
Conclusion: Thirty-eight patients (63%) consented and completed the survey. 66% were males, 34% females, mean age was 30 years, mean FEV1 was 64%. Half had private insurance and 55% were chronically colonized with PA. Mean scores of the 38 patients for the CFQ-R ranged from 51 to 91 (out of 100). Patients with higher FEV1 generally scored higher in all domains. Numerical diiferences were seen in 5 of 12 domains (physical, health perception, body image, weight and digestion) when comparing access to private insurance. Those with PA scored worse in all domains except for 3 (social, role and digestion). Numerical differences were also seen in 4 domains (physical, health perception, social and digestion) when comparing access to optimal therapy.